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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/433,202	11/04/1999	HARIKLIA DRIS REITZ	N19.12-0026	2243

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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
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1755

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/433,202

Applicant(s)

REITZ ET AL.

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-58 is/are pending in the application.
- 4a) Of the above claim(s) 49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-48 and 50-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1755

Applicants state that the limitation defining that the particles “have visible facets corresponding to the underlying crystal lattice”, ^{which} ~~which~~ means that the particles are “jagged or irregular”, is supported by page 19, lines 20-22 of the specification. With all due respect, page 19, lines 20-22 says nothing about the shape of the particles. Page 36, lines 7+ defines the shape of the particles and defines that the particles have a roughly spherical gross appearance (shape) and upon closer examination the particles have facets corresponding to the underlying crystal lattice.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/4/06 has been entered.

Claims 39-43, 46-48, 50-54 and 56-58 are rejected under 35 U.S.C. 102(e) as being anticipated by or in the alternative under 35 U.S.C. 103(a) as obvious over Hampden-Smith et al.

Hampden-Smith et al. teaches in sections 0213, 0217, 0221-0224, 0239-0243 and claims 1, 4, 7, and 12, particles for polishing (i.e. collection of particles) comprising an abrasive of ceria, zirconia, titania, alumina, silica or a mixture thereof in a dispersion form. Section 0228

Art Unit: 1755

defined that the particles may be faceted (i.e. are visible because if they where not visible, the reference would not have mentioned that particles are faceted). The dispersion comprises 1-20 wt. % particles, water, a surfactant and other organic materials (the use of organic reads on instant claim 54). The particles are either (1) single crystals (size of at least 20 nm) or (2) agglomerates of numerous crystals (size of 0.1-.75 microns (100-750 nm)). The sizes are substantially uniform and meet the criteria defined in section 0221 of the reference. The reference also states that complex oxide of the abrasives can be used.

The claimed invention is anticipated by the reference because the reference teaches a collection of particles comprising the claimed materials. With respect to the distribution defined in the claims, section 0221 of the reference discloses a distribution that broadly reads on the claimed distribution. The reference literally discloses size values that are consistent with the instant claims. In the alternative, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Claims 44-45 are rejected under 35 U.S.C. 103(a) as obvious over Hampden-Smith et al. alone, as applied to claim 39 above or further in view of Shyu or Chittofrati et al.

Shyu teaches in column 1, lines 20-24 that aluminum titanate is a known abrasive.

Chittofrati et al. teaches in column 5, lines 9-10 that aluminum silicate is a known abrasive.

Art Unit: 1755

With respect to the use of aluminum titanate and aluminum silicate, as the abrasive according to Hampden Smith et al., this reference teaches that the abrasive can be titania, alumina, silica or a mixture and that the abrasive can also be complex oxide of the abrasives. This broadly makes obvious the claimed material because they are complex oxide of alumina and titania (aluminum titanate) and alumina and silica (aluminum silicate). One skilled in the art from reading the reference would have appreciated that the claimed materials are envisioned by the reference teaching of the claimed oxides coupled with the teaching that complex oxides can be used. In the alternative, the use of any known abrasive material, as the abrasive material according to the primary reference, would have been well within the scope of the skilled artisan because the substitution of one known abrasive for another is clearly within the level of ordinary skill. Since the secondary references clearly teach that the claimed materials are known abrasives, the use thereof is obvious for the above reasons.

Claim 55 is rejected under 35 U.S.C. 103(a) as obvious over Hampden-Smith et al., as applied to claim 50 above and further in view of Farkas et al.

Farkas et al. teaches in abstract and column 6, lines 14-20 that in polishing compositions the solvent can be water, an alcohol or a mixture thereof.

Farkas et al. teaches that the use of an alcohol or alcohol/water medium is conventional in polishing compositions and is the examiners position that one skilled in the art would have routinely known that either water, alcohol or an alcohol/water carrier can be used as the dispersing medium to form polishing compositions.

Claim 58 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6 and 25 of copending Application No. 09/841,255.

The copending claims suggest a collection of particles, wherein said particles can have a size distribution within the claimed range, thus meeting instant the size limitation of claim 58. With respect to the particle type, the claims defines the particles as a non silicon material and one skilled in the art would have appreciated and found the claimed abrasives obvious because Hampden-Smith et al. teaches that the claimed materials are conventional non silicon based materials for use in polishing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 39, 40, 41, 45-48 and 50-57 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26-31 of copending Application No. 09/841,255 in view Hampden-Smith et al., Sachan et al. and Farkas et al. alone or further in view of Chittofrati et al.

The copending claims suggest a collection of particles, wherein said particles can have a size distribution within the claimed range, thus meeting instant the size limitation of claims. With respect to the particle type, the claims defines the particles as a silicon compound and one skilled in the art would have appreciated and found the claimed abrasives obvious because Hampden-Smith et al. broadly suggests that complex oxides of alumina and silica (see above) are conventional non silicon based materials for use in polishing. In the alternative, the use of any known abrasive material, as the abrasive material according to Hampden-Smith, would have

Art Unit: 1755

been well within the scope of the skilled artisan because the substitution of one known abrasive for another is clearly within the level of ordinary skill. Since Chittofrati et al. clearly teach that the claimed materials (silicon compound) is a known abrasive, the use thereof is obvious for the above reasons.

With respect to claim 52, the addition of a surfactant would have been obvious because Sachan et al. teaches that these additive are conventionally added to polishing composition for various reasons and the use of any known polishing additive would have been well within the scope of the skilled artisan in order to vary the polishing characteristics, as well as, minimize agglomeration which could be detrimental to the performance of the polishing composition (i.e. larger sizes (agglomerates) will maximize scratching).

With respect to claim 55, Farkas et al. teaches that the use of an alcohol or alcohol/water medium is conventional in polishing compositions and is the examiners position that one skilled in the art would have routinely known that an alcohol or an alcohol/water carrier can be used as the dispersing medium to form polishing compositions.

With respect to claims 56-57, the copending claims are silent with respect to the amount of particles in the dispersion, however, it is the examiners position that that one skilled in the art would have routinely known the amount of abrasive to be included in the polishing slurry to produce the most optimum slurry, said amount being a conventional amount, as clearly shown by Farkas et al.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant's arguments filed 12/4/06 have been fully considered but they are not persuasive.

On page 7, lines 4-11 of the response, applicants state that there has been a misunderstanding and that Hampden-Smith et al. only teaches one situation involving agglomerates of numerous crystals. The examiner is unclear as to this argument because the reference clearly teaches in section 0224 that the particles can be single crystal particles (i.e. primary particles) or may be composed of a number of crystallites (i.e. secondary particles), said particles having an average crystallite size (primary size) of at least 10 nm. The instant claims define a collection of primary particles and having a primary size of less than 500 nm, wherein the particles have visible facets. When section 0224 of the reference is coupled with the teachings in section 0228 (the particles may become faceted), this implies that the crystalline particles have facets (i.e. are visible because if they were not visible, the reference would not have mentioned that particles are faceted). The instant claims define a collection of primary particles having a primary size of less than 500 nm, wherein the particles have visible facets. The reference clearly teaches all of the claimed limitation and, contrary to applicants position, no misunderstanding (on the examiners part) is apparent.

On page 7, lines 12-19, applicants appear to argue that Hampden-Smith et al. teaches away from the claimed particles since it teaches that the particles are spherical, whereas the claimed particles are "jagged and irregular. This argument is not persuasive because applicants arguments contradict the specification on page 36, lines 7+. Page 36, lines 7+ define the shape of the particles and disclose that the particles have a roughly spherical gross appearance (shape) and upon closer examination the particles have facets corresponding to the underlying crystal

Art Unit: 1755

lattice. This page defines that the particles are spherical and in no way states that the particles are “jagged or irregular” as defined and argued by applicants. Since applicants define that the limitation “have visible facets corresponding to the underlying crystal lattice” means that the particles are “jagged or irregular” (see page 7, line 15 of the response dated 12/4/06), it is apparent that applicants arguments are inconsistent with what is defined in the specification. (i.e. that the particles are spherical). Applicants also argue that this reference does not teach how to produce different particles. This argument is irrelevant to the instant claims because the instant claims are not directed to how the particles are produced.

On page 8, line 1-page 9, line 6, applicants argue the three criteria for establishing a prima facie case of obviousness. The examiner is well aware of these criteria. With respect to the first criteria (suggestion of motivation), the examiner has clearly defined the proper suggestion or motivation and a mere statement by applicants without pointing to any specific deficiency is not a proper response. With respect to the second criteria (expectation of success), the expectation of success is that Hampden Smith et al. teaches that the abrasive can be titania, alumina, silica or a mixture and that the abrasive can also be complex oxide of the abrasives (see sections 0213-0214 and claim 7). In addition, the expectation of success can be established from the skilled artisan in reading the references in that the substitution of one known abrasive for another is clearly within the level of ordinary skill. Contrary to applicants position, this is not based on applicants disclosure. With respect to the third criteria, when combined, the references teach all of the claimed limitations.

Applicants also argue that Hampden-Smith et al. does not teach the formation of aluminum titanate or aluminum silicate. Although the reference does not literally teach

Art Unit: 1755

aluminum titanate and aluminum silicate, the reference states that the abrasive can be titania, alumina, silica or a mixture and that the abrasive can also be complex oxide of the abrasives (see sections 0213-0214 and claim 7). A complex oxide of alumina and titania is aluminum titanate and a complex oxide of alumina and silica is aluminum silicate. With respect to any arguments based on how to produce different particles, this argument is irrelevant to the instant claims because the instant claims are not directed to how the particles are produced. With respect to Shyu or Chittofrati et al., applicants appear to argue these references in relation to the formation of the particles. This argument is irrelevant to the instant claims because the instant claims are not directed to how the particles are produced. Applicants argument of these references does not address the examiners obviousness determination.

On page 9, first full paragraph, applicants do not argue the examiners obvious determination of Hampden-Smith et al. in view of Farkas et al., as applied in the previous rejection, but rather appear to be arguing the references alone and in combination.

On page 9, line 18-page 10, applicants do not argue the ODP rejections and thus no comment is necessary.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/433,202
Art Unit: 1755

Page 10



Michael A. Marcheschi
Primary Examiner
Art Unit 1755

MM
12/06